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	° ′ ″	
M	349 16 41·9	1853, June 0·0
π	235 24 35·7	1853·0
λ	45 55 18·0	
ι	3 35 45·0	
φ	4 55 51·1	
Log a	0·4236444	
Log μ	2·914541	

The following are the errors (computed—observed) in longitude and latitude:—

	″	″
May 20·5	−0·4	+1·2
June 3·0	−0·1	−1·0
17·0	+0·3	−1·3
July 6·0	+0·6	+1·0

The errors in R.A. and N.P.D. of two observations at Washington, on the 23d and 24th of July, not included in those from which the elements are obtained, are

	$\delta\alpha$ ″	δp ″
July 23	+2·8	−0·2
24	−2·5	−1·7

The foregoing elements were accompanied with an ephemeris of the planet for the opposition of 1854, extending from July 15 to August 24. A few printed copies have been forwarded by Prof. Chevallier to the Apartments of the Society for distribution.

Notes on the Second Comet of 1854. By the Rev. T. W. Webb.

"As far as my opportunities of information have extended, this fine and conspicuous comet appears to have been noticed at Ross, in the county of Hereford, on the evening previous to its general recognition by English astronomers. About 7^h 30^m P.M. on the 28th of March, it was pointed out by an intelligent little boy of ten years old as "a stranger in the sky," and in consequence was seen by several persons before it sank into a bank of clouds in the N.W. horizon. From one of these, my friend, Mr. W. H. Purchas, I received immediate information of its appearance, and was thus enabled to watch its progress every night except two, from March 29th to April 5th, with a good achromatic by Tulley, of 5½ feet focal length, and 3·7 inches aperture. In this and smaller glasses, as well as to the unassisted eye, it uniformly appeared in all its parts of a pale orange or fiery hue, and of an aspect which would have been deemed in former times terrible and portentous.

"During the earlier observations, with low powers, and comparatively near the horizon, the brilliant nucleus, of several seconds in diameter, was seen suddenly but not sharply defined, having

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neither a stellar nor planetary appearance. With higher magnifiers its vivid light was diffused into a hazy mass of considerable brightness, not much condensed towards the centre. April 2d, it was thought smaller and more stellar with a power of 64. April 3d, this impression was confirmed; with 64 and 80 its aspect was almost that of a star; with higher powers up to 330, there was occasionally a suspicion of a strong luminous point in the centre of the diffused nebulous brightness; but this was seldom visible, and the air was too unsteady to admit of any certainty. In this respect it reminded me of the comet of July 1850, as well as of similar observations of Hooke and Schröter. With powers from 80 to 330, the light of the nucleus appeared condensed or accumulated, though but very slightly, on the side next the sun: this was also noticed on the following night, April 4th. April 5th, the nucleus was thought to be still becoming smaller and more definite. At the end of March it was as conspicuous to the naked eye as a 2d or 3d magnitude star, but it soon became less luminous.

" On March 29th, the nucleus was encompassed by a narrow border of faint yellow light, forming a hemispherical cap or envelope on the side turned to the sun, which seemed to have become less distinctly marked by April 3. From this envelope rose the tail, which was very narrow in proportion to its length, widened very gradually, and exhibited a decided curvature. Its convex side seemed a little better defined than the other on March 29th; this difference, however, on April 3d appeared to have become less sensible. Its length, notwithstanding a brilliant moonlight, was estimated on April 4th at least 5° by oblique vision with the naked eye. On March 30th, I began to perceive, with a comet eye-piece of M. Sécrétan's construction, that it ascended from the sides of the envelope in two apparent streams, very little denser, however, than the general mass, and soon becoming undistinguishable from it. April 4th, this indication of a hollow interior was perhaps still more evident, and the stream on the N. side seemed the more luminous, though on the following edge of the train as respects the orbital motion of the comet.

" On the first evening of my observations, as well as frequently afterwards, I thought there was, to the naked eye, aided only by a concave lens to correct near-sightedness, an appearance of blazing up, or flashing, issuing from the head into the denser portion of the tail; of this Mrs. Webb, whose eye is very sensitive to light, was on several occasions perfectly confident. These coruscations could not however be traced in the telescope.

" Mr. Purchas, at Ross, observed nearly the same phenomena with an achromatic of 4 inches aperture, as well as with the naked eye. At its first appearance on March 28th, he considered the nucleus as brilliant as *β Arietis*, with a tail extending about 3° in the strong twilight. He noticed the sharper definition of the convex side of the tail at first, as well as its subsequent decrease in this respect: its length was estimated by him on March 29th at 5°; and on March 30th he thought he could detect, without the telescope,

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faint traces of two smaller and shorter tails, one on each side, diverging at a greater angle from the nucleus, and resembling some of the appearances figured by Schröter in 1811. This, however, was not confirmed by the telescope, nor did he see it on the following nights. He traced the same faint indications of a hollow structure in the train, especially on March 30th. On April 3d, and subsequently, they had become less evident. Coruscations appeared to him to be distinguishable both by the naked eye and with the telescope."

Photographic Pictures of the Moon taken with the Equatoreal of the Liverpool Observatory. By John Hartnup, Esq.

Mr. Hartnup exhibited ten collodion pictures of the moon, of 1·35 inches diameter, and ten enlarged copies, taken from the originals, which varied from 2 to 4½ inches in diameter.

The photographs were all taken during the preceding month; and Mr. Hartnup stated that he only looked upon the progress now made as one step towards that degree of perfection which he had every reason to hope he should shortly arrive at.

In taking the pictures, the clock was so regulated that the telescope followed the moon in right ascension nearly; then, the hour-circle and the declination-circle being both clamped, the image of the moon was kept as nearly as possible in the same place, as seen in the finder, by means of the rods for giving slow motion to the instrument in right ascension and declination. The circles are each four feet diameter; the slow motion is given by means of tangent screws; and the instrument is so firmly mounted as to render the task of correcting for irregular motion of clock, change of moon's declination, and change arising from differences of refraction and parallax during the operation, comparatively easy.

The chemicals employed were those ordinarily used for taking a positive collodion picture on glass; and Mr. Hartnup acknowledged the great obligation that he was under to Messrs. Forrest, Berry, Edwards, M'Innes, and Towson, of the Liverpool Photographic Society, for the kind advice and assistance which he had from time to time received from them.

Of the photographs exhibited there were two (one taken before and one after the full), which, when placed in the stereoscope so as to be seen as one image, the appearance was that of a semi-transparent globe, the effect being perfectly stereoscopic. The enlarged pictures were shown on a screen by means of a magic lantern, kindly supplied for the occasion by Mr. Simms. Most of them were too large for the lens, so that only a portion of the picture could be seen at the same time on the screen, though it was eight feet diameter. There was, however, one photograph of a half moon, and one of a full moon, small enough for the screen; and these pictures were much admired. The President alluded to the gratifying progress of Mr. Hartnup's labours in connexion